

Application # FA1- 00609-1 (CIRM Institute)

PROPOSAL:

This application proposes construction of a four-story building (one floor of which will be below grade) to co-locate the institution's key stem cell researchers and provide space for new core facilities in support of stem cell research. The CIRM project consists of 129,788 assignable square feet (asf) and 200,000 gross square feet (gsf) with a total cost of \$200 million and requested CIRM funding of \$50 million. The project addresses the need for co-location of investigators and expansion of research capacity. At occupancy, the facility will house 24 research teams (PIs) of which 12 will be new to the institution. The facility also incorporates 60 benches and additional offices that would accommodate 15-20 visiting faculty. In addition to new vivarium space, the proposed core facilities will augment an extensive array of existing core facilities including space for a Rapid Autopsy and Tissue Processing and Banking Core and a Microfluidics Core Facility that are unique in California. Completion of the project is scheduled for July 2010.

Space Summary Table

Space Category	Amount of Space (asf)	Percent of Total	Asf per PI at 24 PIs
Lab, Lab Support, PI off	81,567	63%	3,398
Core Facilities	37,849	29%	1,577
Other Offices	9,281	7%	387
Admin and Support	1,091	1%	45
Total	129,788	100%	5,408

STAFF ANALYSIS

VALUE:

Costs:

Cost Summary Table

Cost Category	Total Amount	Amount/PI
Building	\$195,543,272	\$8,147,636
Group 2 Equipment	\$4,456,728	\$185,697
Total	\$200,000,000	\$8,333,333
CIRM Amount	\$50,000,000	\$2,083,333
Applicant Amount	\$150,000,000	\$6,250,000

The estimated total project cost is \$200 million with a building cost of \$171.5 million, project management administrative costs of \$18 million, and a contingency set-aside of \$6 million. Group 2 equipment to be purchased as part of the project amounts to \$4.5

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million. Existing equipment, however, valued at \$9-12 million will be relocated to the facility and an additional \$7-12 million for equipment will be expended in the future as new research teams are formed and the building is fully occupied.

The overall cost per gsf is \$978/gsf, which is in the mid to upper range in comparison to other buildings in the CIRM Institute category with an average of \$936/gsf. By virtue of the large size of the project, there are economies of scale that benefit this project. Moreover, this applicant is a private institution that is subject to development fees imposed by local government to assist in mitigating local impacts of growth at the institution. Therefore, the project costs includes \$19.5 million (\$98/gsf) in development fees that would not be included if the project were built at a public (UC) institution with its own entitlement authority. Adjusting the overall building cost to exclude these fees results in a cost per square foot of \$880/gsf which is below the average for the CIRM Institute category.

The amount budgeted for equipment is modest (\$22/gsf) relative to the other proposals because the applicant plans to relocate a considerable amount of existing equipment to the building from existing campus and leased space, and plans acquisition of equipment in connection with future recruitments. When these sources of equipment outside the current project funds are considered, the cost per square foot for equipment is in the range of \$100 to \$143/gsf. This range is comparable to equipment budgets for typical laboratory projects indicating that adequate equipment will be available to make the facility operable.

The CIRM cost for laboratory and PI related space (excluding cores) is \$1,475,788 per PI, which is eight percent lower than the \$1,620,927 average for CIRM Institute applications.

Sustainability & Innovation

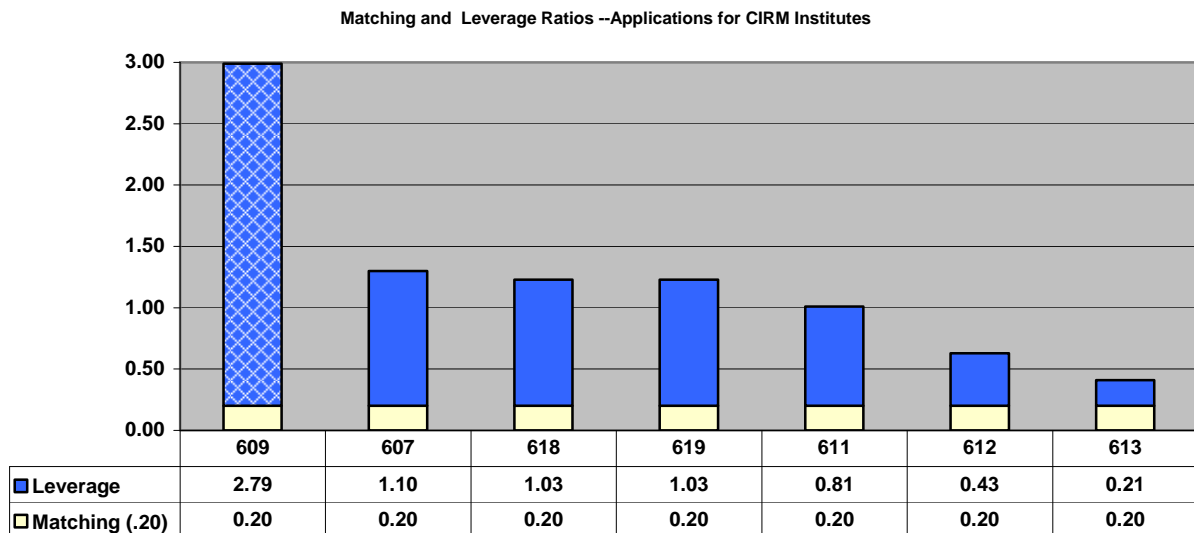
The application indicates that the design is expected to achieve a LEED certification at the Silver level.

Elements of the application cited as innovative include the incorporation of 60 laboratory bench spaces that are located within the 24 (assigned) laboratory suites to accommodate the needs of the pre-clinical and translational researchers who are located at the campus but are not housed within the building. This strategy is unique among the applications received. The rapid autopsy core is the only one in California and the microfluidics core facility is touted as being unique in the world. The vivarium is designed to use plastic recyclable cages which will eliminate the need for water and energy resources associated with conventional cage washing operations. The implementation strategy for this project takes the fast-track of engaging the contractor early in the design process to identify opportunities for cost savings and schedule management not possible under the traditional design-bid-build process.

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LEVERAGE:

The application includes leverage of \$136,480,831. This is the institutional investments in excess of the required matching funds after conforming to the allowable amount for fees and administrative costs. The CIRM funds to leverage ratio is 1: 2.79. When both matching and leverage funds are considered, this ratio rises to 1: 2.99. The following table compares the net leverage for this application (crosshatched) to the other applicants in the category of CIRM Institutes.



URGENCY:

The applicant began planning the project in 2001 as part of the strategic plan for its School of Medicine. The applicant has completed program planning, secured the necessary permits, and hired a contractor. The project will be accomplished in two phases of development consisting of steel and mass excavation work followed by the building interior improvements. The project schedule indicates that Phase 1 will commence July 2008 and be completed in April 2009. The Phase 2 work will begin in January 2009 and be completed in June 2010. The project qualifies for priority consideration because completion is projected within two years from approval of the grant.

The applicant's team for managing delivery of the project has considerable depth of experience both with the applicant and with other laboratory projects of similar scope. Early identification of the general contractor provides a distinct advantage over the typical design-bid-build delivery strategy because the design can be influenced by the

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contractor while drawings are being prepared. In the alternative process, contractors may find issues with the design that result in costly change orders.

SHARED RESOURCES:

Currently, the stem cell program at this institution involves 200 PIs. Numerous pre-existing laboratories and cores devoted to stem cell research will be available to researchers in this building, including an existing Good Manufacturing Practice (GMP) core and a computational research core. The building will provide additional cores that will be available to off-site campus-based stem cell researchers as well as to collaborating institutions. The resulting breadth of the institution's core resources will be extensive and will expand the available services to eliminate some resource bottlenecks, most notably the tissue and hESC banking capabilities, specific pathogen free rodent barrier and transgenetics facility, and FACS facilities. The applicant indicates that economies of scale associated with the cores will result in significant cost savings. Specifically, operating eight FACS in a single core at this facility is expected to generate a cost savings of \$1.5 million a year in comparison to operating the same number of FACS at several different locations. This will result in savings to CIRM in the form of lower recharges to CIRM-funded investigators using the cores.

Cores:

- Traditional non-barrier Veterinary Service Center (VSC) and transgenic facilities
- Biostatistics
- Cancer Imaging
- Assisted Reproductive Technologies (ART) Clinic
- Forty-two other academic cores
- Stanford Center for Clinical and Translational Education and Research (SCCTER)
- Research Management Group (RMG)
- Office of Technology Licensing (OTL)
- SPARK
- Institutional Review Board (IRB)
- Stanford Stem Cell Research Oversight Committee (SCRO)

FUNCTIONALITY:

The proposed facility design responds to program needs through the use of open and flexible research laboratories. Ample research space is provided for assigned investigators and for up to 20 guest investigators that would use the shared benches located throughout the laboratory space. Support space is provided in an amount equal to the planned laboratory space. Cores are located in the basement for ease of access from within the building and from a subgrade service tunnel connecting to a service network that is out of sight and not in conflict with on-grade circulation. The building is

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conveniently located in close proximity to associated basic research, preclinical and clinical programs operated by the institution. The applicant chose not to include extensive interactive space because the area of the campus where this facility is to be located has an existing oversupply. Facility occupants are expected to use existing facilities and outdoor spaces for meal breaks and informal gatherings.

SUMMARY OF ISSUES FOR THE FACILITIES WORKING GROUP EVALUATION

We found no significant issues.